Solutions

Each answer shows the steps, then the **result**.

2.1

- High temperature and low pressure

2.2

- The volume of the particles; the attractions between particles

2.3

- He — it is small and nonpolar with only weak dispersion forces, so it deviates less than the polar, hydrogen-bonding NH_3

3.1 B

- low temperature and high pressure

3.2

(a)

- Less ideally

(b)

- At low temperature the particles move slowly, so intermolecular attractions pull them together, reducing the pressure below the ideal prediction

3.3

- He has only weak dispersion forces, while H_2O has strong hydrogen bonding; stronger attractions cause larger deviations, so He is more ideal